



Replacement Sheet

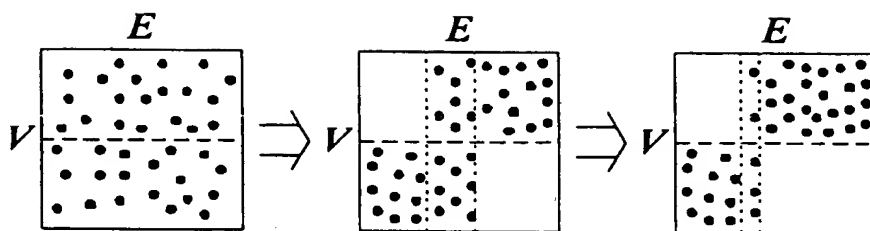


FIG. 1

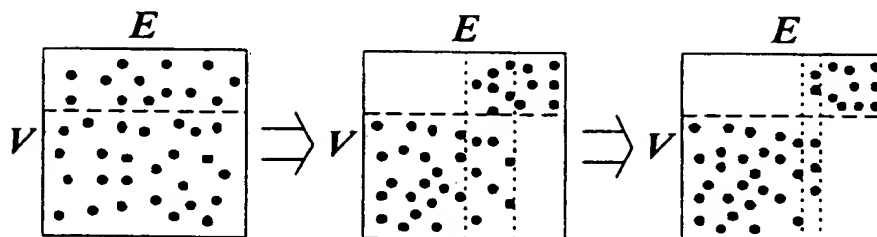


FIG. 2

Replacement Sheet

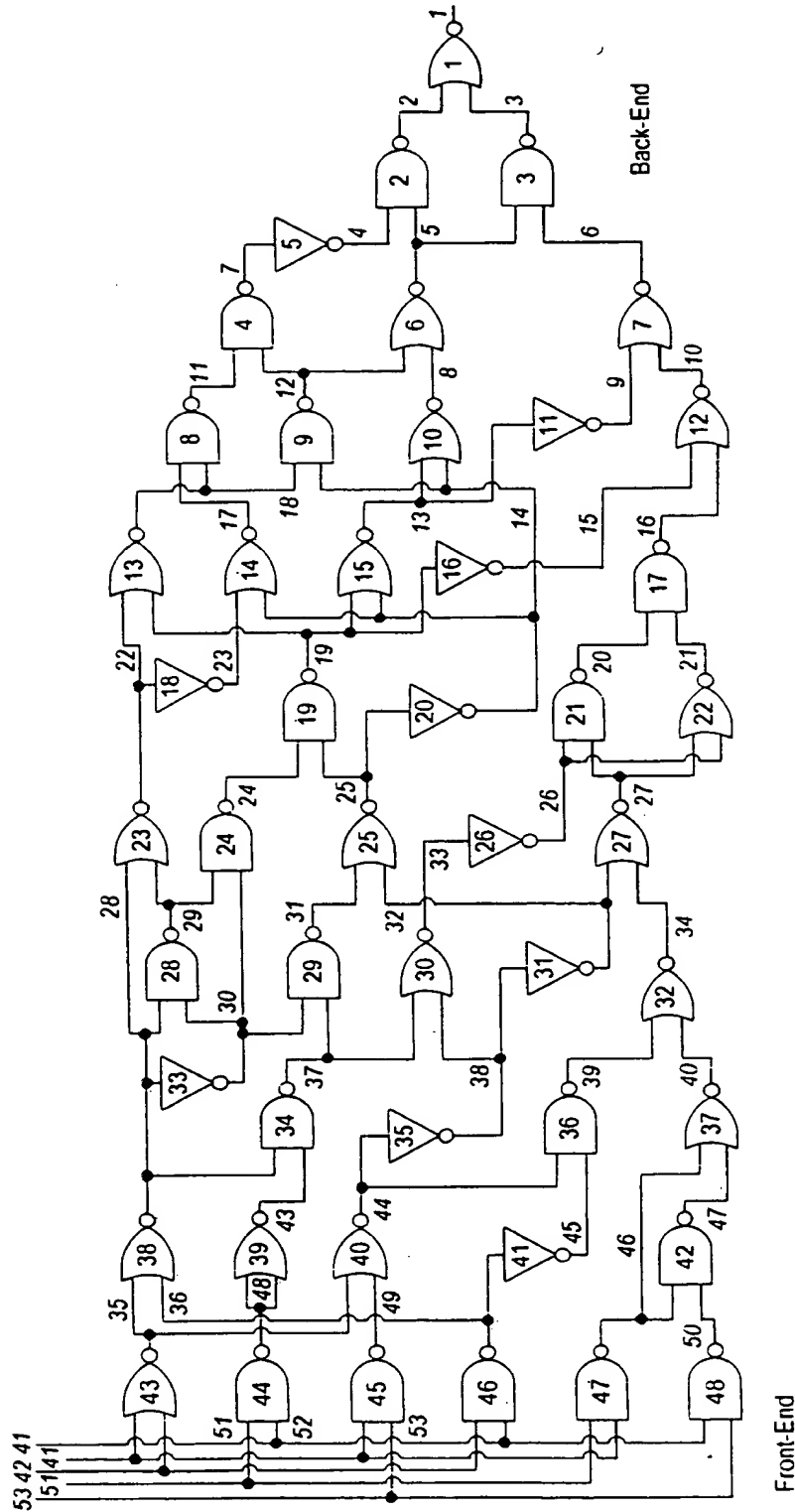


FIG. 3



Replacement Sheet

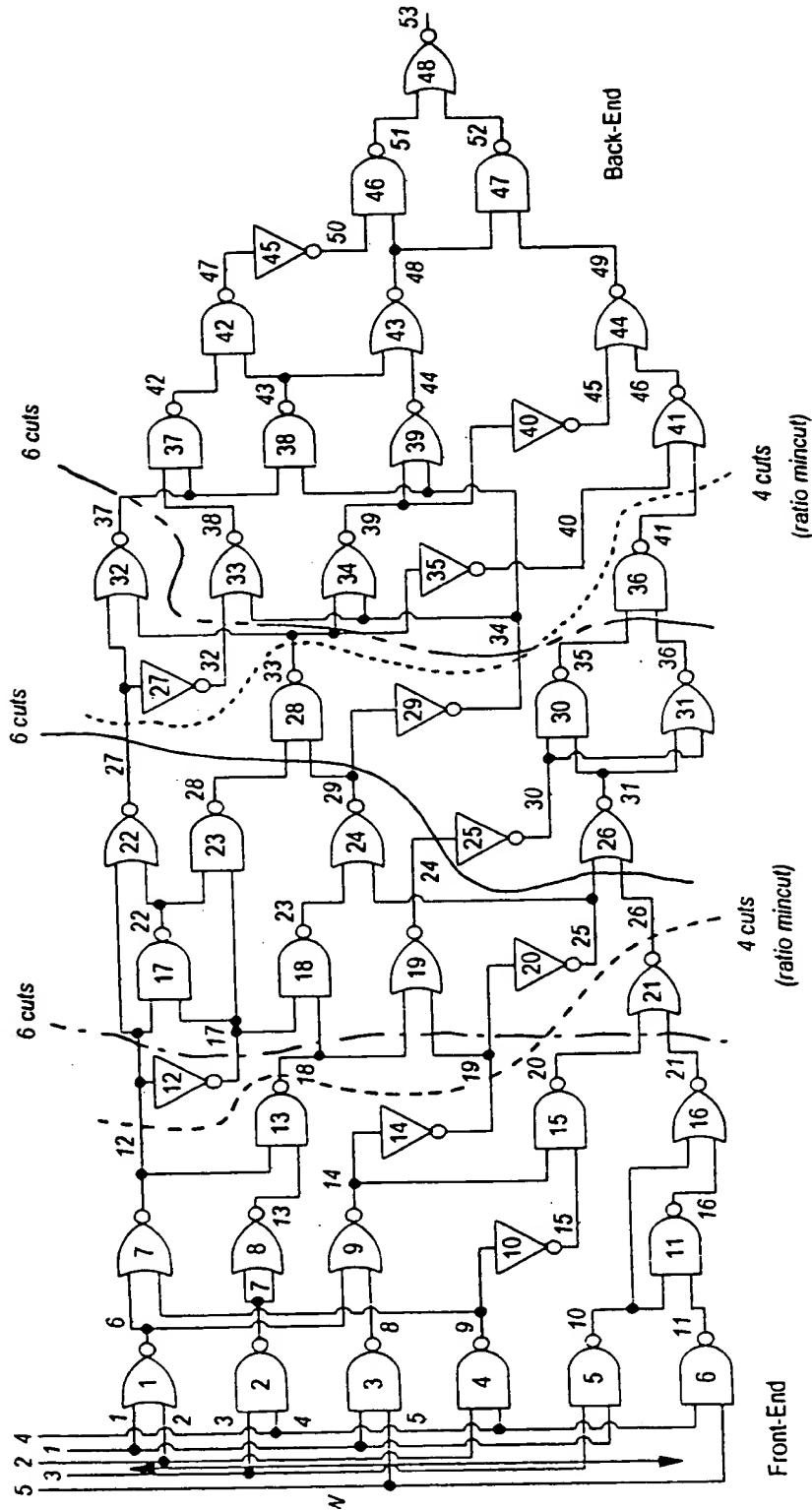


FIG. 4



Replacement Sheet

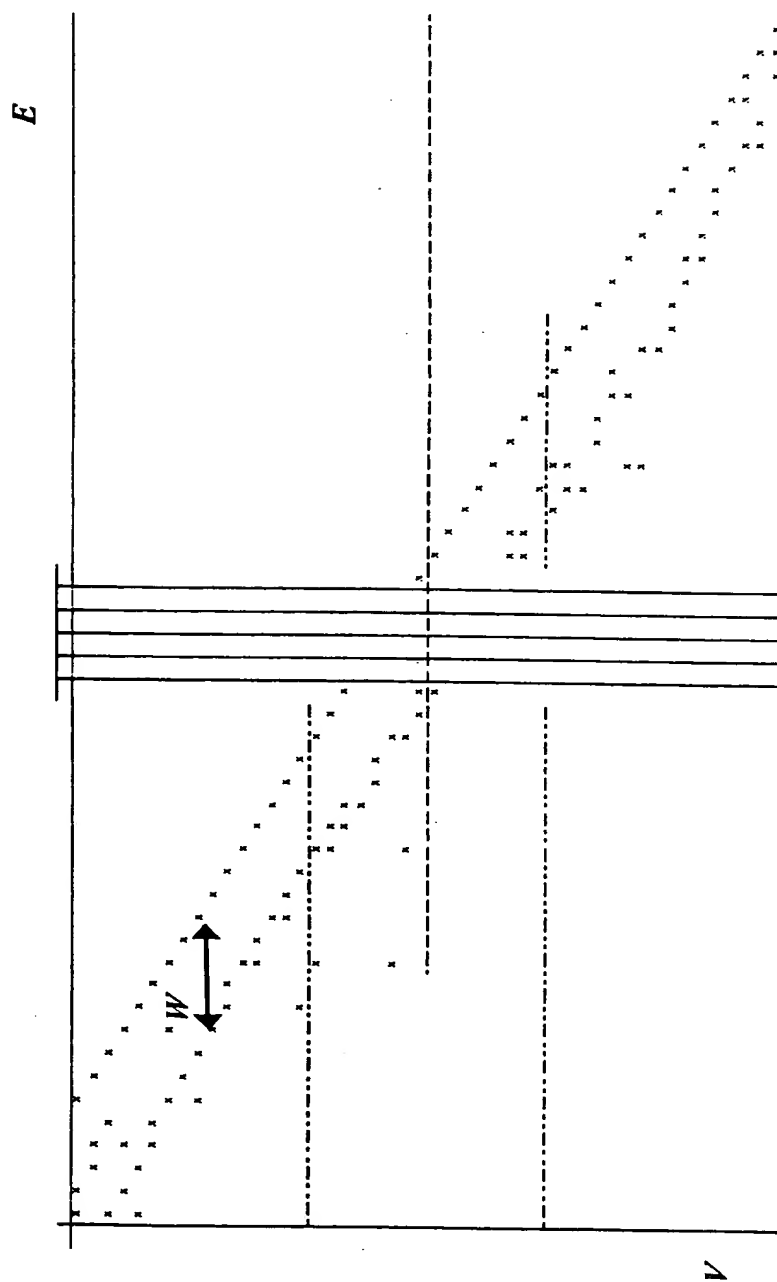


FIG. 5



Replacement Sheet

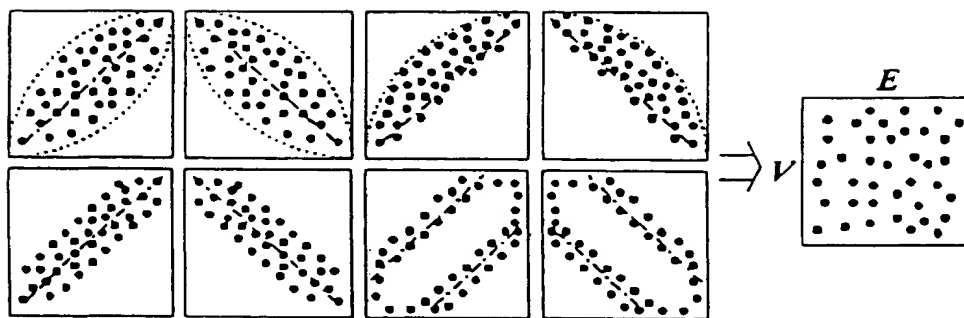


FIG. 6



Replacement Sheet

```
#include <stdlib.h>
#include <stdio.h>
#include <time.h>

#define Required_Num 48
int A[Required_Num], B[Required_Num], C[Required_Num];

int main(void)
{
    int i, j, m, n, seed, non_used;
    time_t t;

    for(i=0; i< Required_Num; i++)
    { A[i]=0; B[i]=i+1; } /* For initialize */

    seed = (unsigned) time(&t); /* srand((unsigned) time(&t)); */
    srand( seed );

    printf("\nSeed %u, random numbers from 1 to %d\n", seed, Required_Num);
    for(i= Required_Num-1; i>=0; i--)
    {
        int k;
        k = (rand() % Required_Num);
        printf("%2d\t", k+1);
        if( B[k] != 0 ) { A[i] = k+1; B[k] = 0; }
    }
    printf("\nArray A... Non-repeated generated numbers (from back-end):\n");
    for(i=0; i< Required_Num; i++) printf("%2d\t", A[i]);

    printf("\nArray B... Not yet used numbers\n");
    i=0;
    for(i=0; i< Required_Num; i++)
    {
        if(B[i]!=0)
        { C[j]=B[i];
          printf("%2d\t", B[i]);
          j++;
        }
    }
    non_used=j;
    printf("\nInsert Sequence of "
           "Non-yet-used Numbers...\n");
    m=n=0;
    for(i=0; i<Required_Num; i++)
    {
        if(A[i]==0)
        {
            if( (j%2) == 0 )
            { A[i] = C[non_used-1-m]; m++;
            }
            else
            { A[i] = C[n]; n++;
            }
            printf("%2d\t", A[i]);
            j--;
        }
    }
    printf("\nAfter Modified...\n");
    for(i=0; i< Required_Num; i++)
        printf("%2d\t", A[i]);

    return 0;
}
```

SOME OUTPUT RESULTS:

```
Seed 35986, random numbers from 1 to 48
38 45 42 5 31 44 47 4 22 23
9 36 27 7 32 5 12 8 29 11
6 11 19 6 13 9 41 3 40 9
43 23 32 36 1 25 26 24 15 32
2 26 47 30 42 17 28 29
Array A... Non-repeated generated numbers (from back-end):
0 28 17 0 30 0 0 2 0 15
24 26 25 1 0 0 0 43 0 40
3 41 0 13 0 19 0 6 11 29
8 12 0 32 7 27 36 9 23 22
4 47 44 31 5 42 45 38
Array B... Not yet used numbers
10 14 16 18 20 21 33 34 35 37
39 46 48
Insert Sequence of Non-yet-used Numbers...
10 48 14 46 16 39 18 37 20 35
21 34 33
After Modified...
10 28 17 48 30 14 46 2 16 15
24 26 25 1 39 18 37 43 20 40
3 41 33 13 21 19 34 6 11 29
8 12 33 32 7 27 36 9 23 22
4 47 44 31 5 42 45 38

Seed 3350, random numbers from 1 to 48
44 13 35 29 43 22 48 37 39 41
6 39 37 4 4 46 31 38 15 27
29 40 41 17 38 32 14 22 7 8
32 23 18 27 5 11 26 1 47 44
30 28 44 19 37 34 48 34
Array A... Non-repeated generated numbers (from back-end):
0 0 34 0 19 0 28 30 0 47
1 26 11 5 0 18 23 0 8 7
0 14 32 0 17 0 40 0 27 15
38 31 46 0 4 0 0 6 41 39
37 48 22 43 29 35 13 44
Array B... Not yet used numbers
2 3 9 10 12 16 20 21 24 25
33 36 42 45
Insert Sequence of Non-yet-used Numbers...
45 2 42 3 36 9 33 10 25 12
24 16 21 20
After Modified...
45 2 34 42 19 3 28 30 36 47
2 26 11 5 9 18 23 33 8 7
10 14 32 25 17 12 40 24 27 15
38 31 46 16 4 21 20 6 41 39
37 48 22 43 29 35 13 44
```

FIG. 7

Replacement Sheet

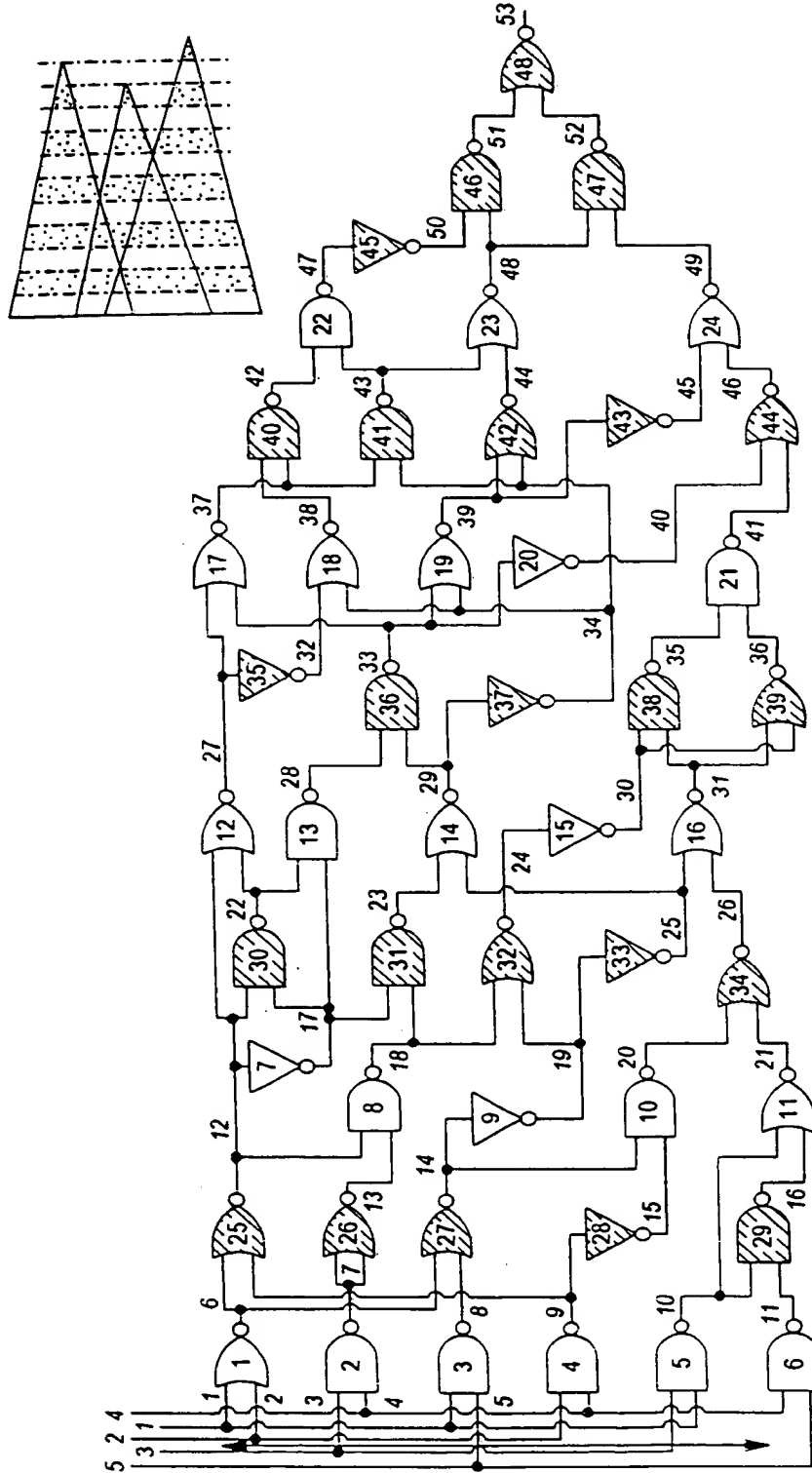


FIG. 8A



Replacement Sheet

Seed 34731, random numbers from 1 to 24									
1	10	21	8	17	6	4	7	22	15
9	9	12	13	12	19	6	4	10	21
23	11	4	24						
Array A... Non-repeated generated numbers (from back-end)									
24	0	11	23	0	0	0	0	19	0
13	12	0	9	15	22	7	4	6	17
8	21	10	1						
Array B... Not yet used numbers									
2	3	5	14	16	18	20			
Insert Sequence of Non-yet-used Numbers...									
2	20	3	18	5	16	14			
After Modified...									
24	2	11	23	20	3	18	5	19	16
13	12	14	9	15	22	7	4	6	17
8	21	10	1						

Seed 34797, random numbers from 25 to 48									
33	41	28	40	33	45	36	48	44	39
27	47	35	37	30	31	44	33	46	25
35	28	30	46						
Array A... Non-repeated generated numbers (from back-end)									
0	0	0	0	25	46	0	0	31	30
37	35	47	27	39	44	48	36	45	0
40	28	41	33						
Array B... Not yet used numbers									
26	29	32	34	38	42	43			
Insert Sequence of Non-yet-used Numbers...									
26	43	29	42	32	38	34			
After Modified...									
26	43	29	42	25	46	32	38	31	30
37	35	47	27	39	44	48	36	45	34
40	28	41	33						

FIG. 8B



Replacement Sheet

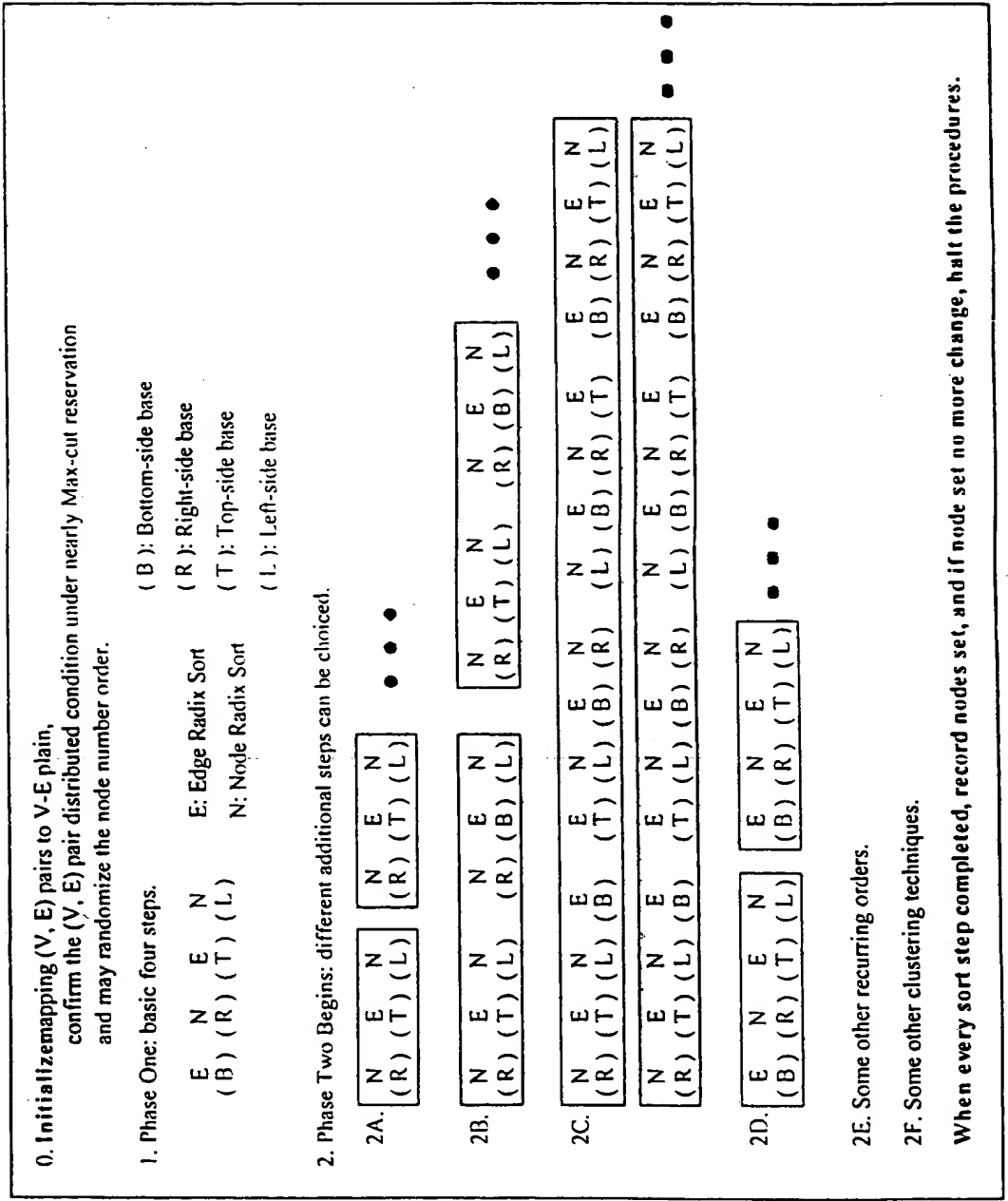
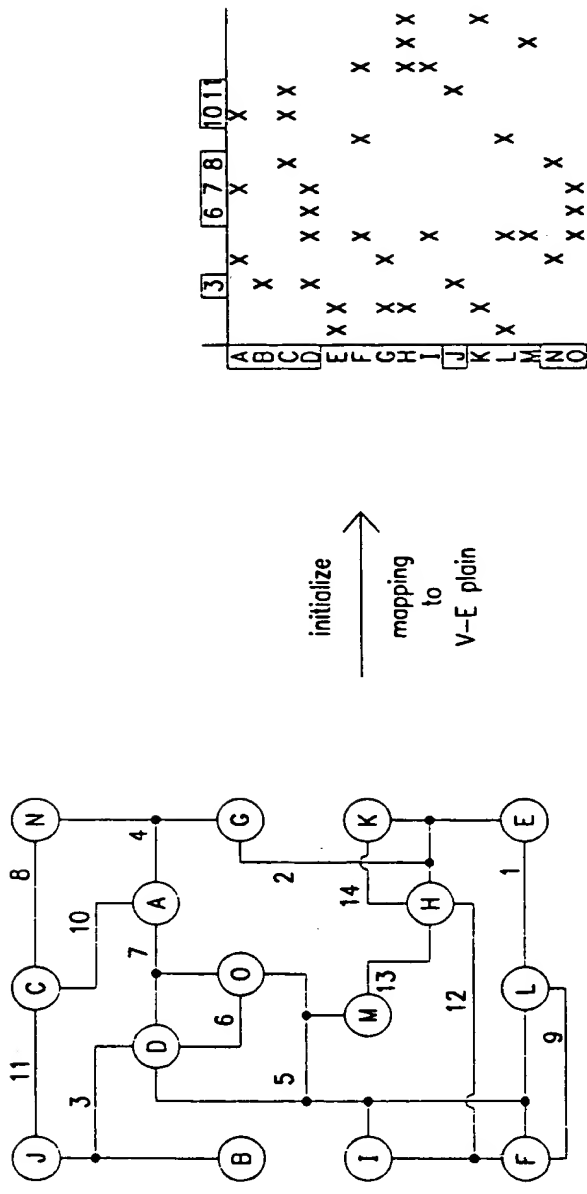


FIG. 9



Replacement Sheet



A 14 edges/15 nodes example.

Confirm the distributed condition.

FIG. 10A



Replacement Sheet

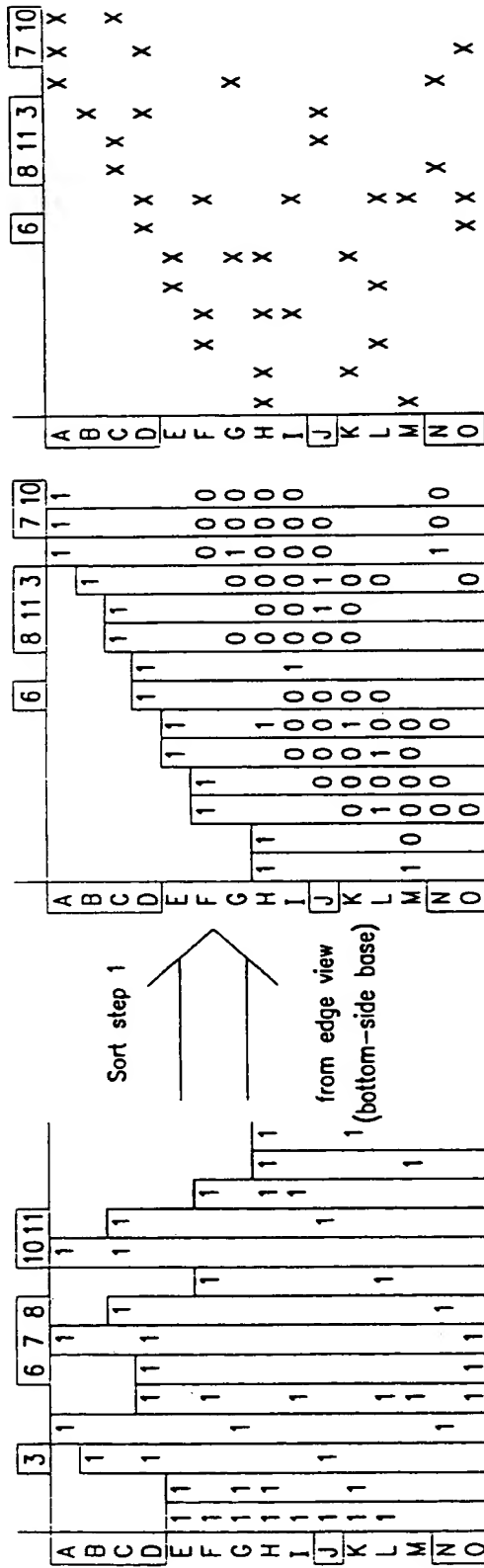


FIG. 10B



Replacement Sheet

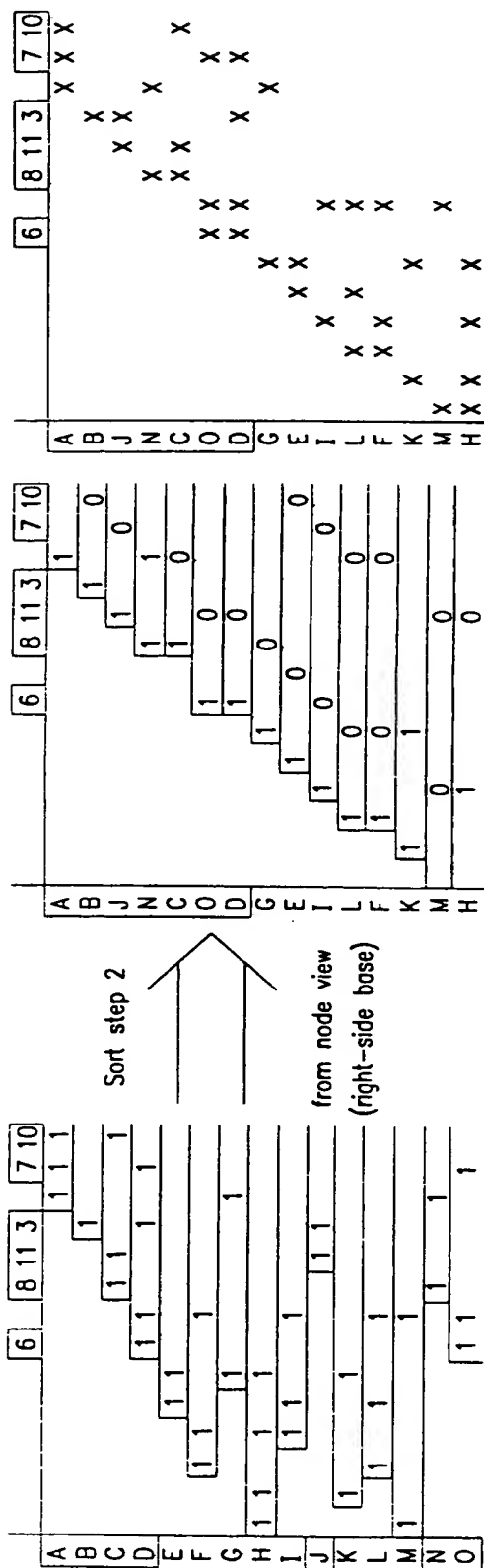


FIG. 10C

Replacement Sheet

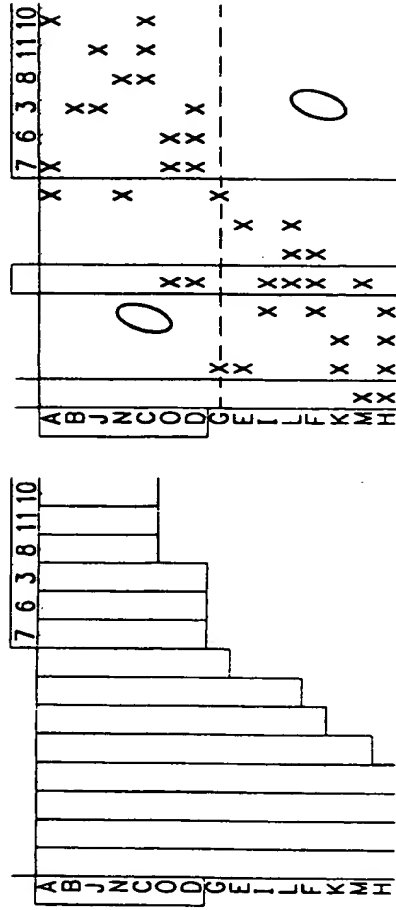


FIG. 10D

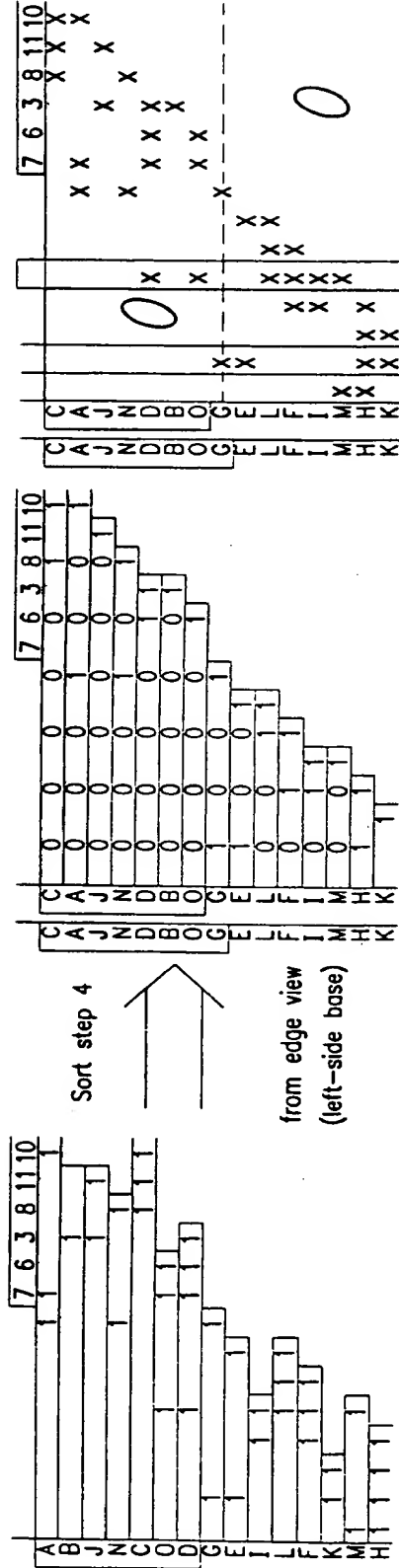


FIG. 10E

Replacement Sheet

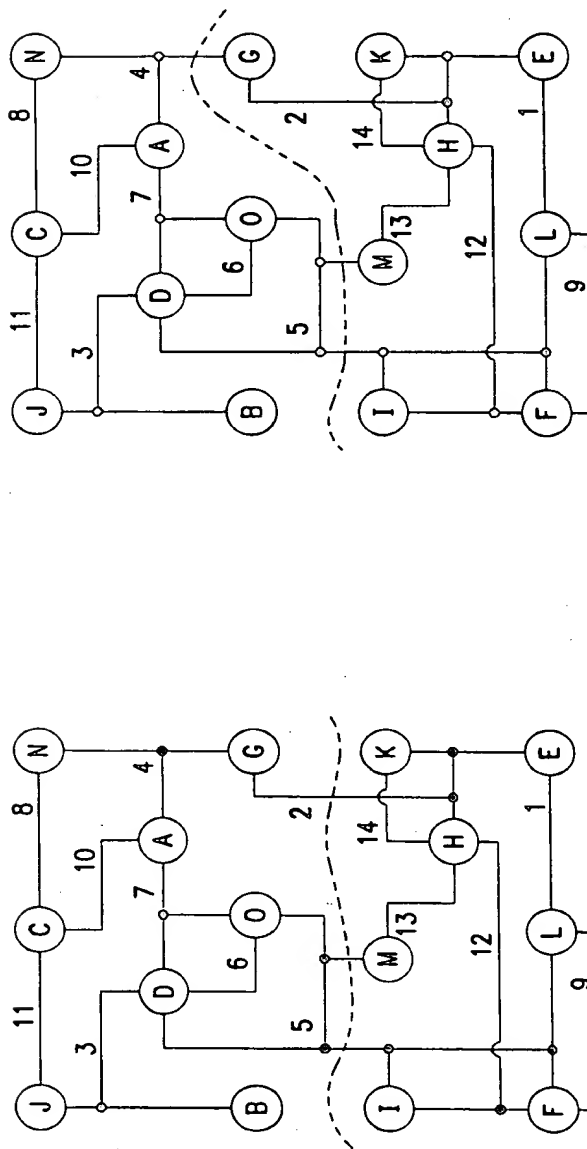
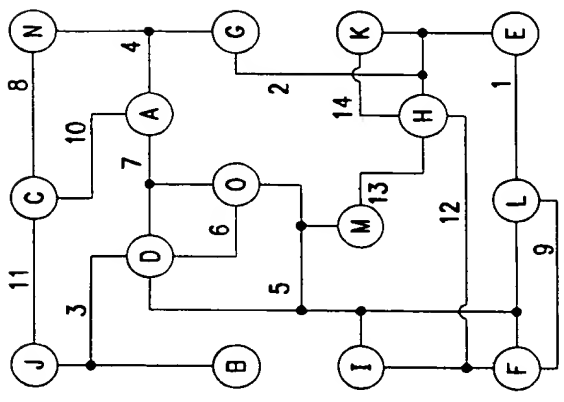


FIG. 10F



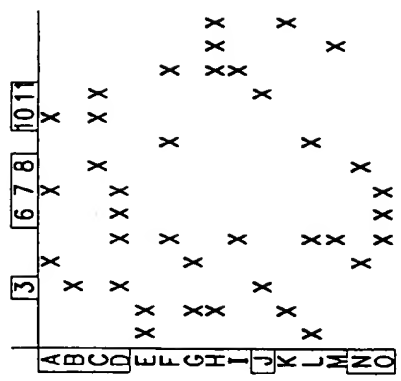
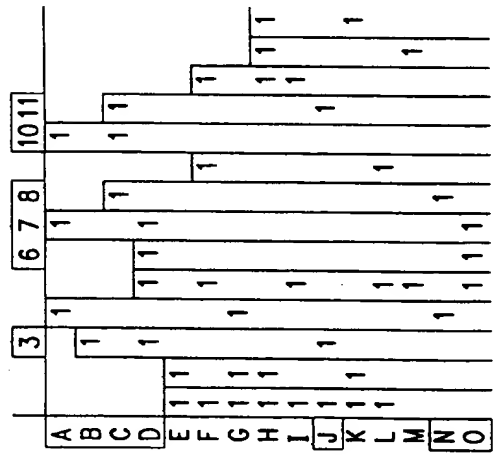
Replacement Sheet



A 14 edges/15 nodes example.

initialize
mapping to
V-E plain

Sort step 1
from edge view
(bottom-side base)



Confirm the distributed condition.

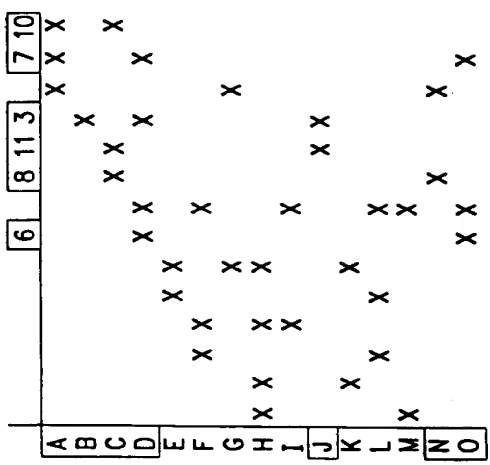
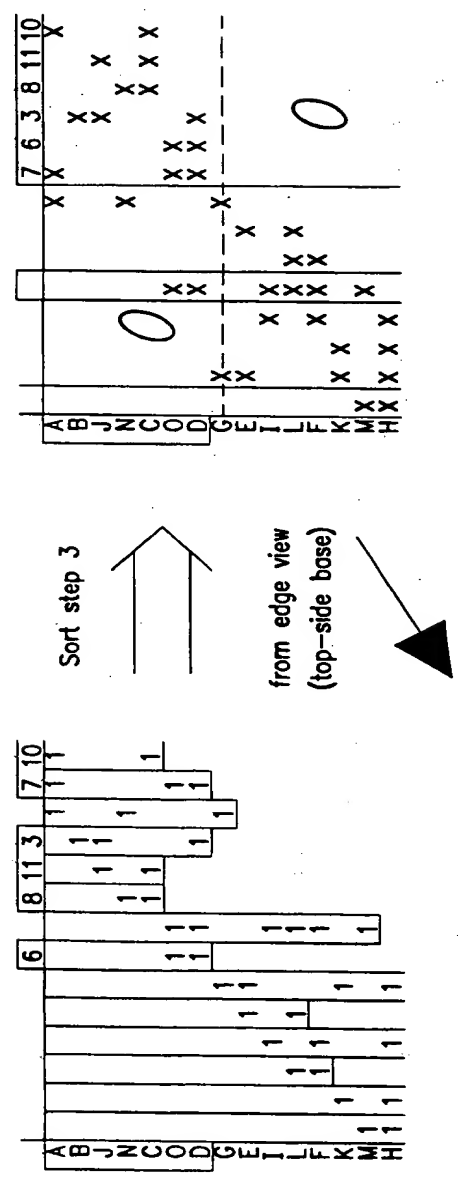
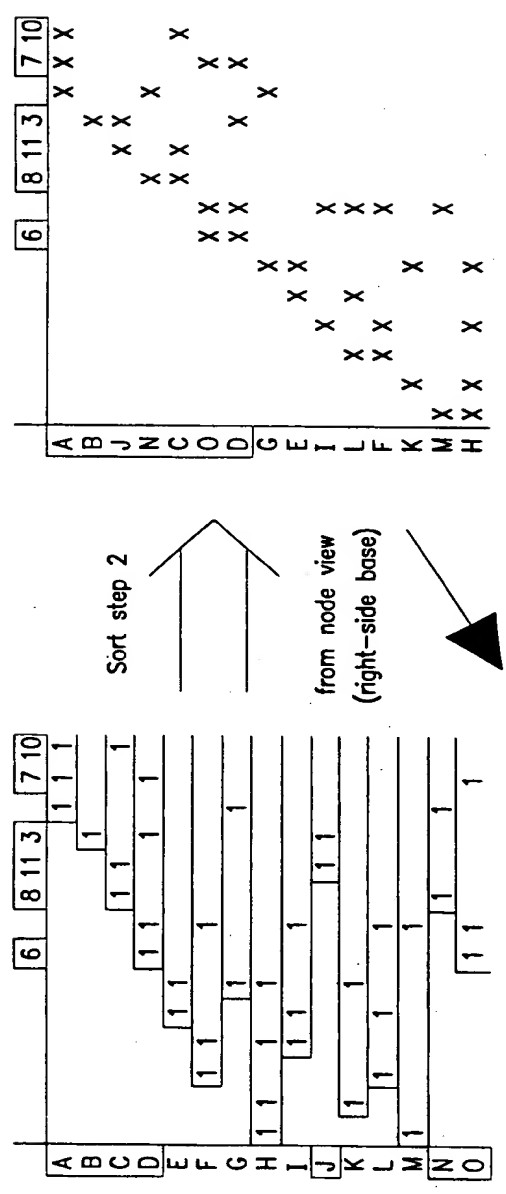


FIG. 11A

Replacement Sheet

FIG. 11B



Replacement Sheet

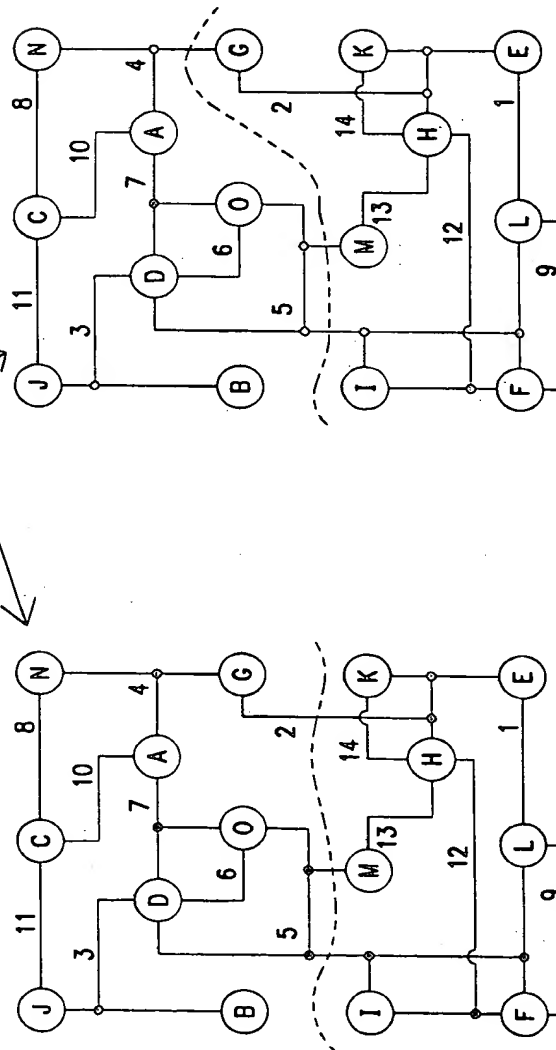
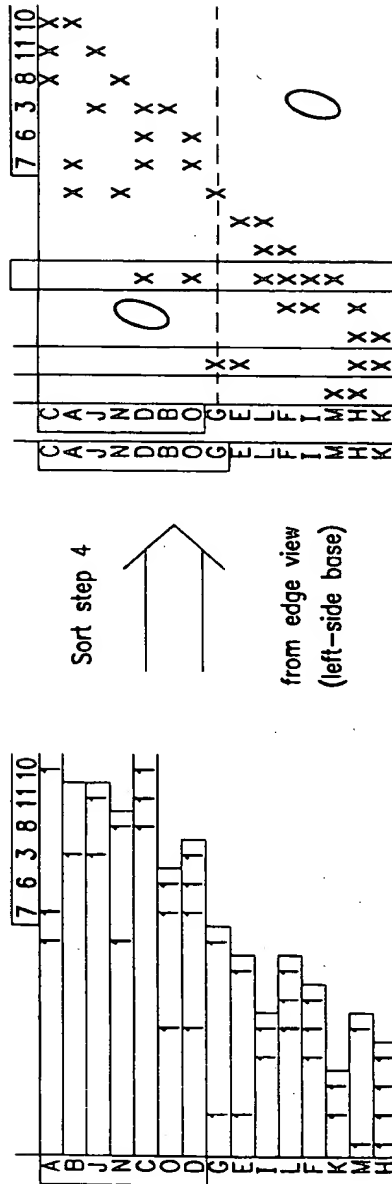


FIG. 11C

Replacement Sheet

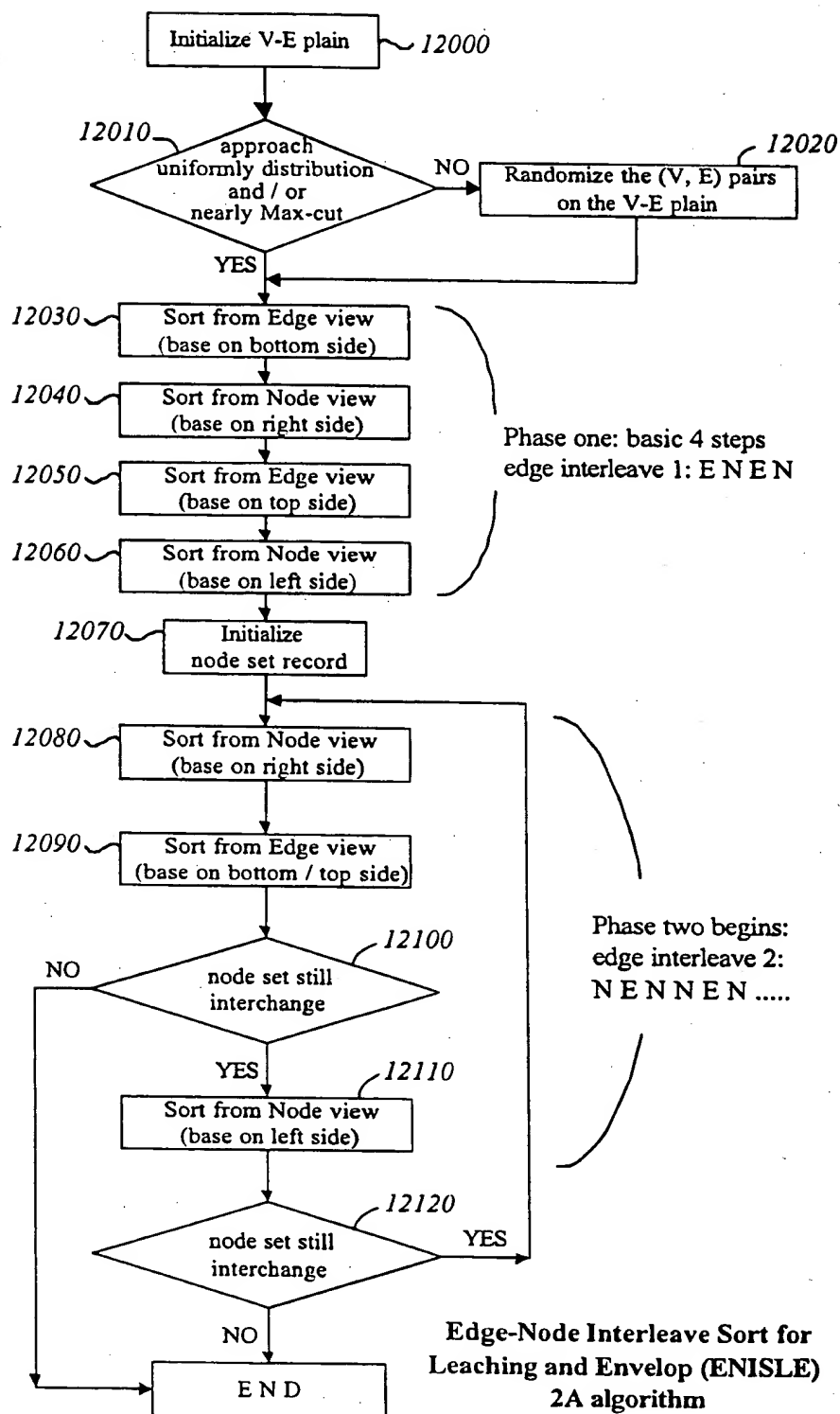


FIG. 12

Replacement Sheet

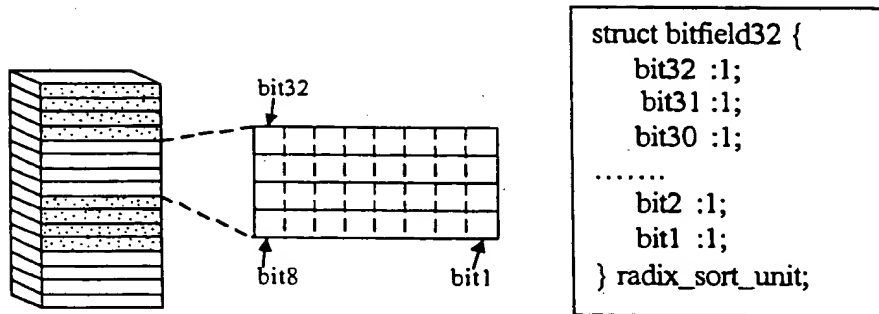
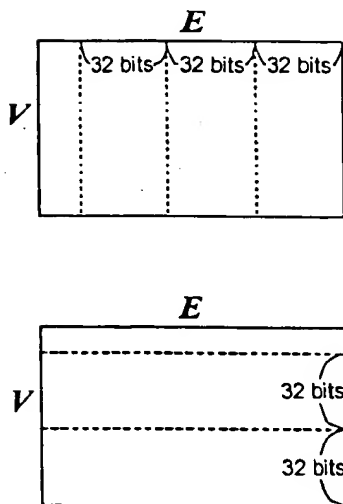


FIG. 13



Radix Sorting (LSD) Example:

232, 321, 213, 231, 111, 112, 132, 123, 221
 1S 321, 231, 111, 221
 2S 232, 112, 132
 3S 213, 123

321, 231, 111, 221, 232, 112, 132, 213, 123
 10S 111, 112, 213
 20S 321, 221, 123
 30S 231, 232, 132

111, 112, 213, 321, 221, 123, 231, 232, 132
 100S 111, 112, 123, 132
 200S 213, 221, 231, 232
 300S 321

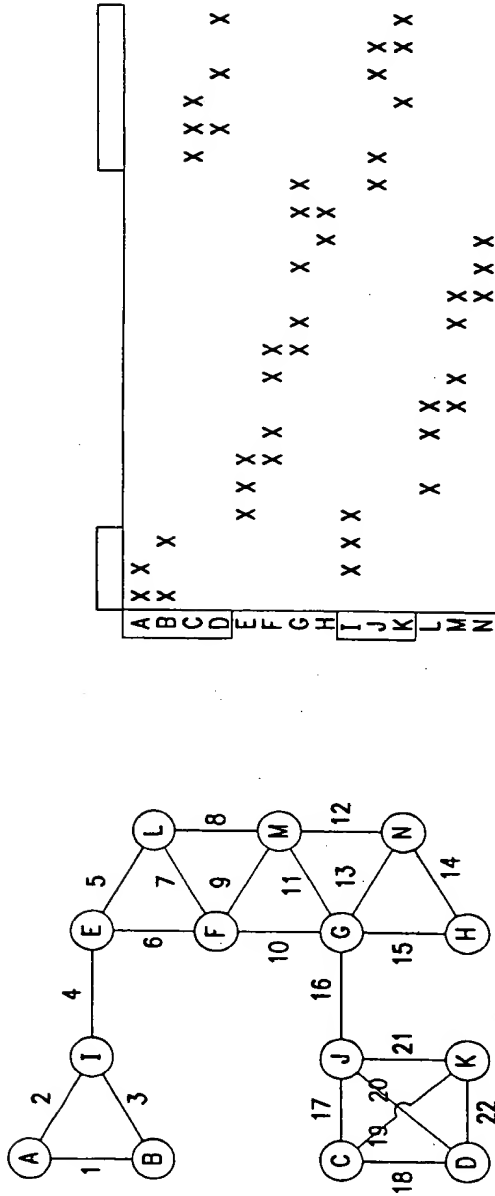
Output: 111, 112, 123, 132, 213, 221, 231, 232, 321

FIG. 14



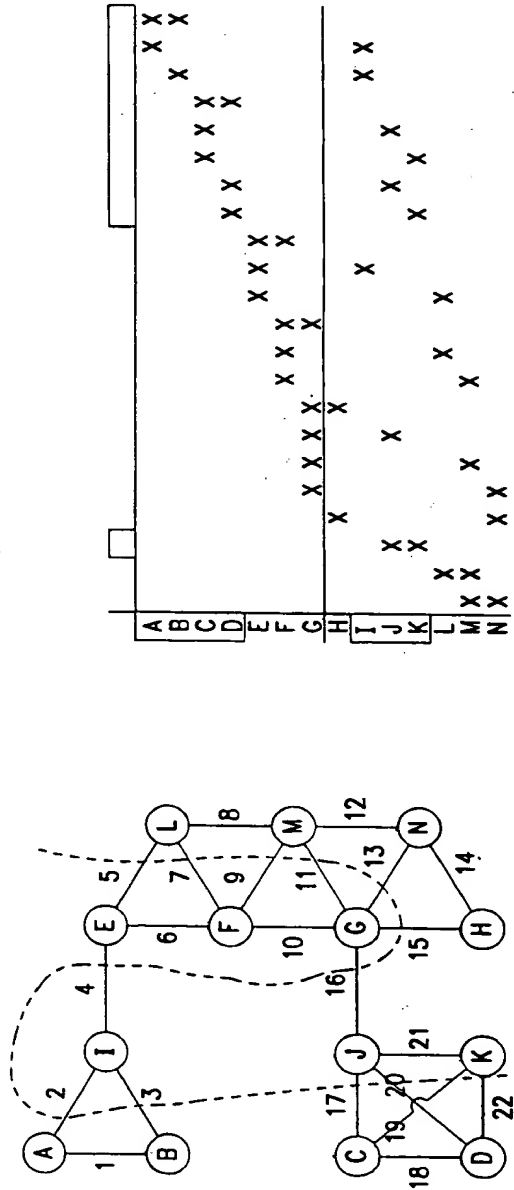
Replacement Sheet

FIG. 15A



Initialize the V-E Plain.

FIG. 15B

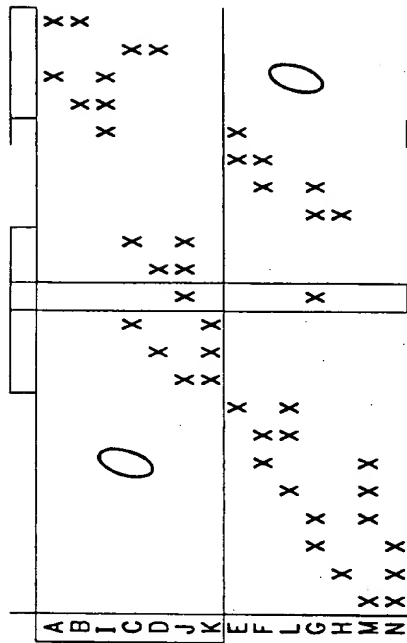


Step 1, cut numbers: 14.

Replacement Sheet

Replacement Sheet

FIG. 15E



Step 5, cut numbers: 2.

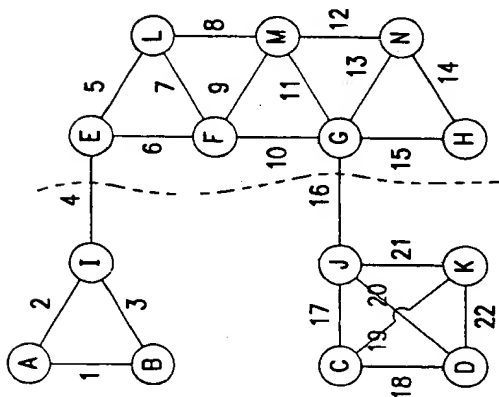
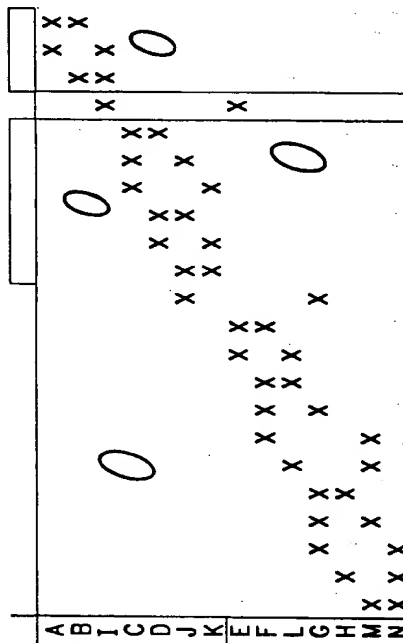
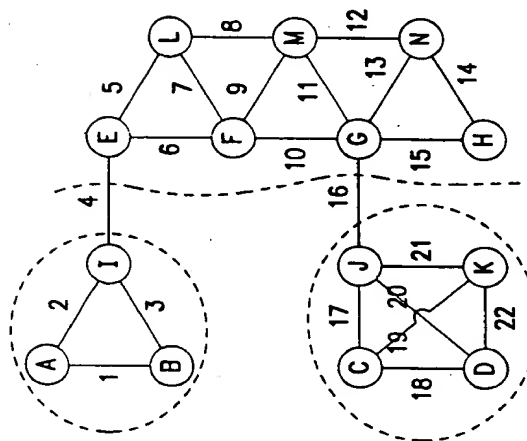


FIG. 15F



Step 6, cut numbers: 2.





Replacement Sheet

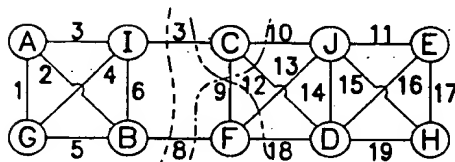


FIG. 16

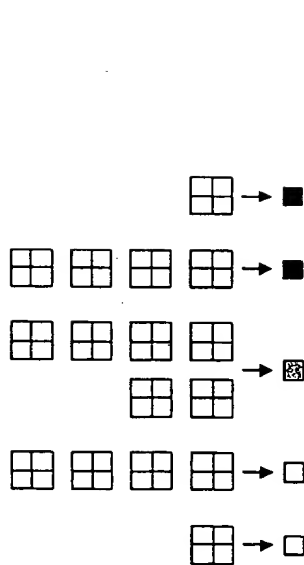


FIG. 17A

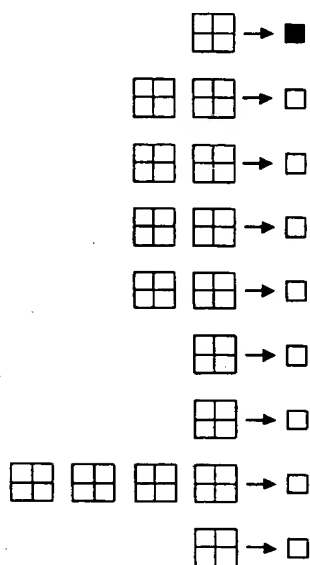


FIG. 17B

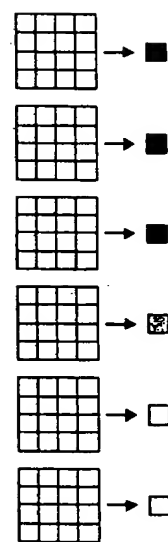
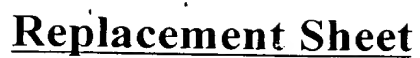


FIG. 17C



Initialize.



Step 1.



Step 2.

FIG. 18A

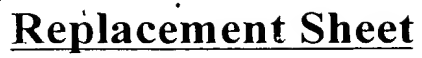


FIG. 18B



Replacement Sheet

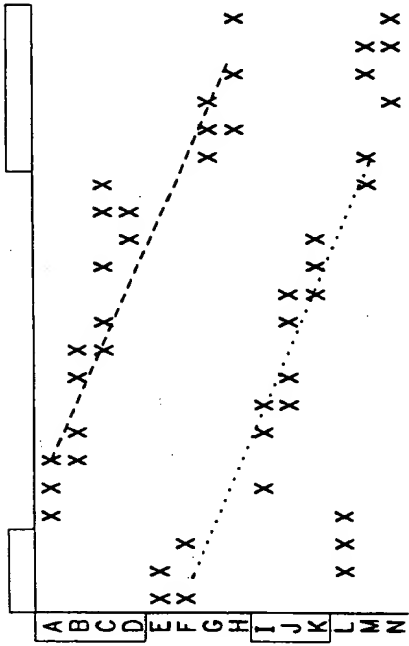
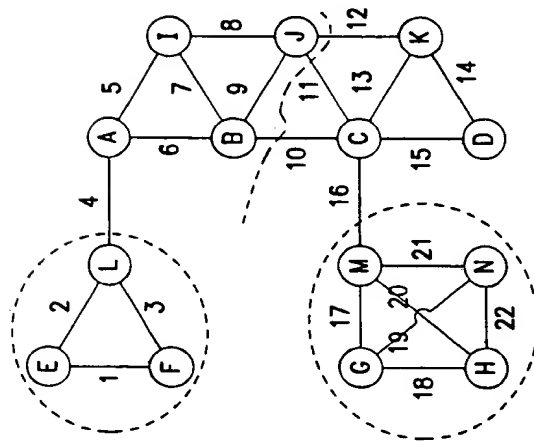


FIG. 19

Replacement Sheet

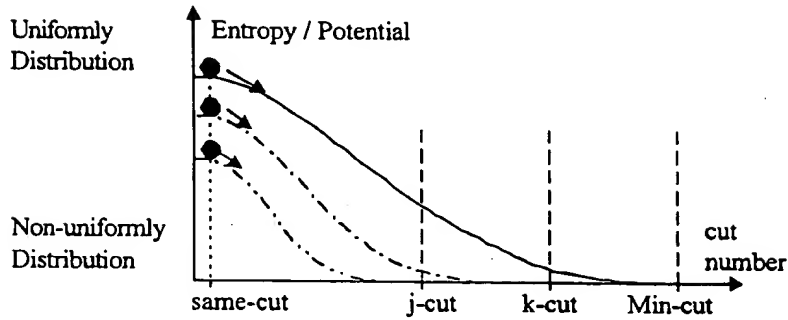


FIG. 20A

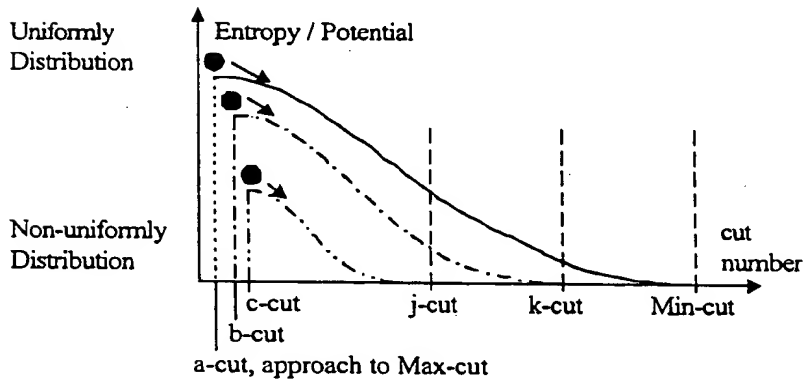


FIG. 20B

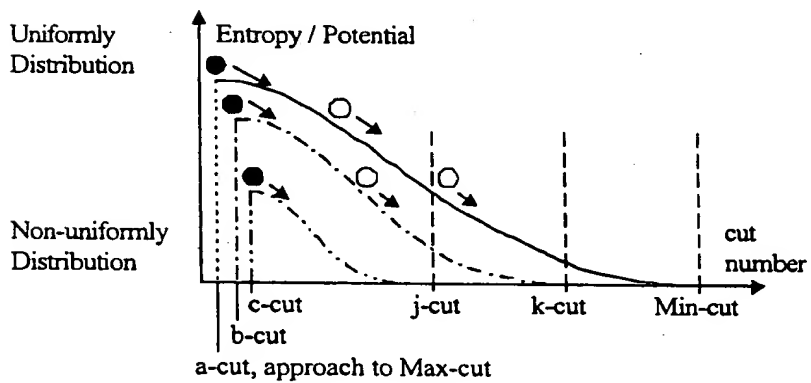


FIG. 20C